

Remarks

Based on the above amendments and the following remarks, Applicants respectfully request that the Examiner reconsider and withdraw the outstanding rejections.

Claim Status

Upon entry of the foregoing amendments, claims 9, 11-17, 19-21 and 26 are pending in the application, with claims 9, 13, 17, 19, 20 and 21 being the independent claims. Claims 9, 11, 12, 13, 19, 21 and 26 have been amended. Support for the claim amendments can be found in the original claims and throughout the Specification. See, for example, page 27-28 of the application as filed. Thus, no new matter is added by way of these amendments, and their entry is respectfully requested.

Claim Rejections Under 35 U.S.C. § 112

Claims 11 and 12 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Applicants respectfully disagree.

With regard to claim 11, the Office Action states that “there is no basis for determining a starting level of RNase activity to which the “reduced” activity of the claim is to be compared.” See Office Action at page 2. The present claim has been amended to recite a composition wherein the “polypeptides are reduced or substantially reduced or lacking in RNase H activity relative to the corresponding wild-type or RNase H⁺ polypeptide.” Support for this claim amendment can be found in the Specification, for example, at pages 27 and 28. Therefore, Applicants respectfully request that the rejection of claim 11 under 35 U.S.C. § 112, second paragraph be withdrawn.

With regard to claim 12, the Office Action states that it cannot be determined what would be considered a “derivative” and questions “how close to the original, wild-type enzymes the derivatives must be in order to anticipate the instant claim.” See Office Action at page 3. For clarity sake, Applicants have amended claim 12 to eliminate the term “derivatives” from the

claim. Therefore, Applicants respectfully request that the rejection of claim 12 under 35 U.S.C. § 112, second paragraph be withdrawn.

Claim Rejections Under 35 U.S.C. § 102(b)

I. Claims 9, 11-13, 21 and 26 are rejected under 35 U.S.C. § 102(b) as being anticipated by Blain *et al.* (J. Biol. Chem., 1996). Applicants respectfully disagree.

An anticipation rejection under 35 U.S.C. § 102 requires a showing that each limitation of a claim is found in a single reference, practice or device. See Kalman v. Kimberly Clark Corp., 713 F.2d 760, 771 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984). See also M.P.E.P. 8th ed., § 2131 (rev. 2, May 2004) ("To anticipate a claim, the reference must teach every element of the claim.").

Claims 9, 11-12 and 26 recite compositions for use in reverse transcription of a nucleic acid molecule. The claimed compositions include a polypeptide that has reverse transcriptase activity, Mg²⁺ or salt thereof and dNTPs in excess of the Mg²⁺ or salt thereof. Claim 13 recites a method for reverse transcription of nucleic acid molecules. The claimed method involves mixing a RNA template, a polypeptide that has reverse transcriptase activity, Mg²⁺ or salt thereof and dNTPs in excess of the Mg²⁺ or salt thereof; and incubating the mixture under conditions sufficient to make a cDNA molecule. Claim 21 recites a kit for use in reverse transcription or amplification of a nucleic acid molecule. The claimed kit includes a reverse transcriptase, Mg²⁺ or salt thereof and dNTPs in excess of the Mg²⁺ or salt thereof.

Blain *et al.* disclose reverse transcription reactions that include Mn²⁺ or Mg²⁺. Blain's reactions contain 4 mM dNTPs (i.e., 1 mM each dATP, dCTP, dGTP, and dTTP) and either 6 mM MgCl₂ or 2 mM MnCl₂. Blain does not disclose compositions, methods or kits where Mg²⁺ is present along with dNTPs, where the dNTPs are in excess of Mg²⁺. Thus, Blain does not anticipate the present inventions and Applicants respectfully request that the rejection of claims 9, 11-13, 21 and 26 under 35 U.S.C. § 102(b) be withdrawn.

II. Claims 9, 11-17, 19-21 and 26 are rejected under 35 U.S.C. § 102(b) as being anticipated by Myers *et al.* (Biochemistry, 1996). Applicants respectfully disagree.

Claims 9, 11-12 and 26 recite compositions for use in reverse transcription of a nucleic acid molecule. The claimed compositions include a polypeptide that has reverse transcriptase activity, Mg²⁺ or salt thereof and dNTPs in excess of the Mg²⁺ or salt thereof. Claims 13-16 recite methods for reverse transcription of nucleic acid molecules. The claimed methods involve mixing a RNA template, a polypeptide that has reverse transcriptase activity, Mg²⁺ or salt thereof and dNTPs in excess of the Mg²⁺ or salt thereof; and incubating this mixture under conditions sufficient to make a cDNA molecule. Claim 17 is drawn to a cDNA molecule made according to the method of claim 13. Claim 19 recites a method for amplifying a nucleic acid molecule. The claimed method involves mixing a RNA template, a polypeptide that has reverse transcriptase activity, a DNA polymerase, Mg²⁺ or salt thereof and dNTPs in excess of the Mg²⁺ or salt thereof; and incubating the mixture under conditions sufficient to amplify a nucleic acid molecule complementary to all or a portion of the RNA template. Claim 20 is drawn to a nucleic acid molecule amplified according to the method of claim 19. Claim 21 recites a kit for use in reverse transcription or amplification of a nucleic acid molecule. The claimed kit includes a reverse transcriptase, Mg²⁺ or salt thereof and dNTPs in excess of the Mg²⁺ or salt thereof.

Myers *et al.* teach reverse transcription reactions that include either Mn²⁺ or both Mn²⁺ and Mg²⁺. The reactions disclosed by Myers contain either 2 mM dNTPs (i.e., 0.5 mM each dATP, dCTP, dGTP, and dTTP) along with 2.5 mM MnCl₂ (for RT assays) or 0.8 mM dNTPs (i.e., 0.2 mM each dATP, dCTP, dGTP, and dTTP) along with 1.0 mM MnCl₂ and 1.5 mM MgCl₂ (for RT/PCR coupled reactions). See Myers at page 7662, column 2. Myers does not disclose compositions, methods or kits where Mg²⁺ is included along with dNTPs wherein the dNTPs are in excess of the Mg²⁺. In the case of Myers' RT/PCR coupled reactions, the Mg²⁺ salt is in excess of the dNTPs that are present. Thus, Myers does not anticipate the present invention and Applicants respectfully request that the rejection of claims 9, 11-17, 19-21 and 26 under 35 U.S.C. § 102(b) be withdrawn.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,
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Date: April 16, 2007